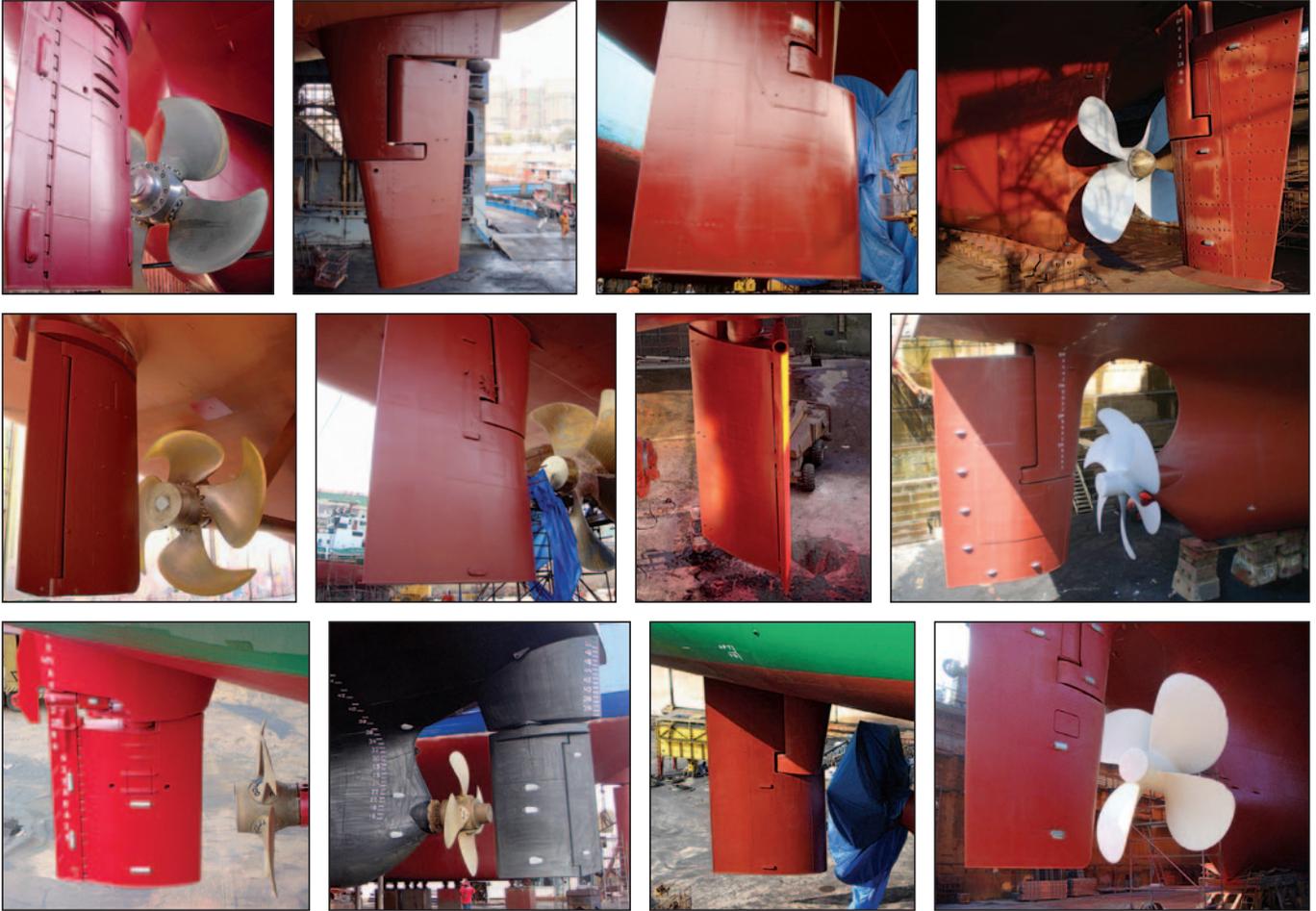


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LASTING PROTECTION



Ecoshield gives a very thorough and lasting defense against cavitation and corrosion damage for a ship hull's entire service life.

The coating equally provides the rudder with an impenetrable protective layer while its flexibility enables absorption of the forces that are produced by cavitation. This prevents the damage normally caused

by this phenomenon.

Without proper protection against cavitation and the resulting erosion and corrosion damage, the financial consequences can be severe.

By removing the existing paint layers and applying Ecoshield on the rudder we can break the never ending cycle of painting, suffering damage, having

to perform extensive repairs in dry-dock followed by a full repainting, again and again.

With an Ecoshield application no full repaint will be needed during drydocking. Ecoshield is guaranteed for ten years. At the most, minor touch-ups will be required.

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Lasting protection for scrubbers and outlets

Over the last year our Ecospeed coating system was applied on the scrubber pipes, outlets and diffusers of over 30 vessels. This demonstrates that Ecospeed is not only the best option for the underwater hull of a ship but can also be used for a wide range of other purposes. The result is a lasting, non-toxic protection against corrosion, cavitation and mechanical damage.

Because of the tight regulations on emissions in the shipping industry, the installation of an exhaust scrubber system has become increasingly widespread. This unfortunately has also led to an increase of corrosion damage on scrubber pipes and outlets which results in water ingress in the engine room, ballast tanks and cargo holds.

Ecospeed however is highly chemically resistant. Using the coating to



Ecospeed application on scrubber pipe.

protect the exterior outlets as well as the interiors of scrubbers will prevent corrosion damage and the resulting consequences.

Ecospeed fits in seamlessly with the

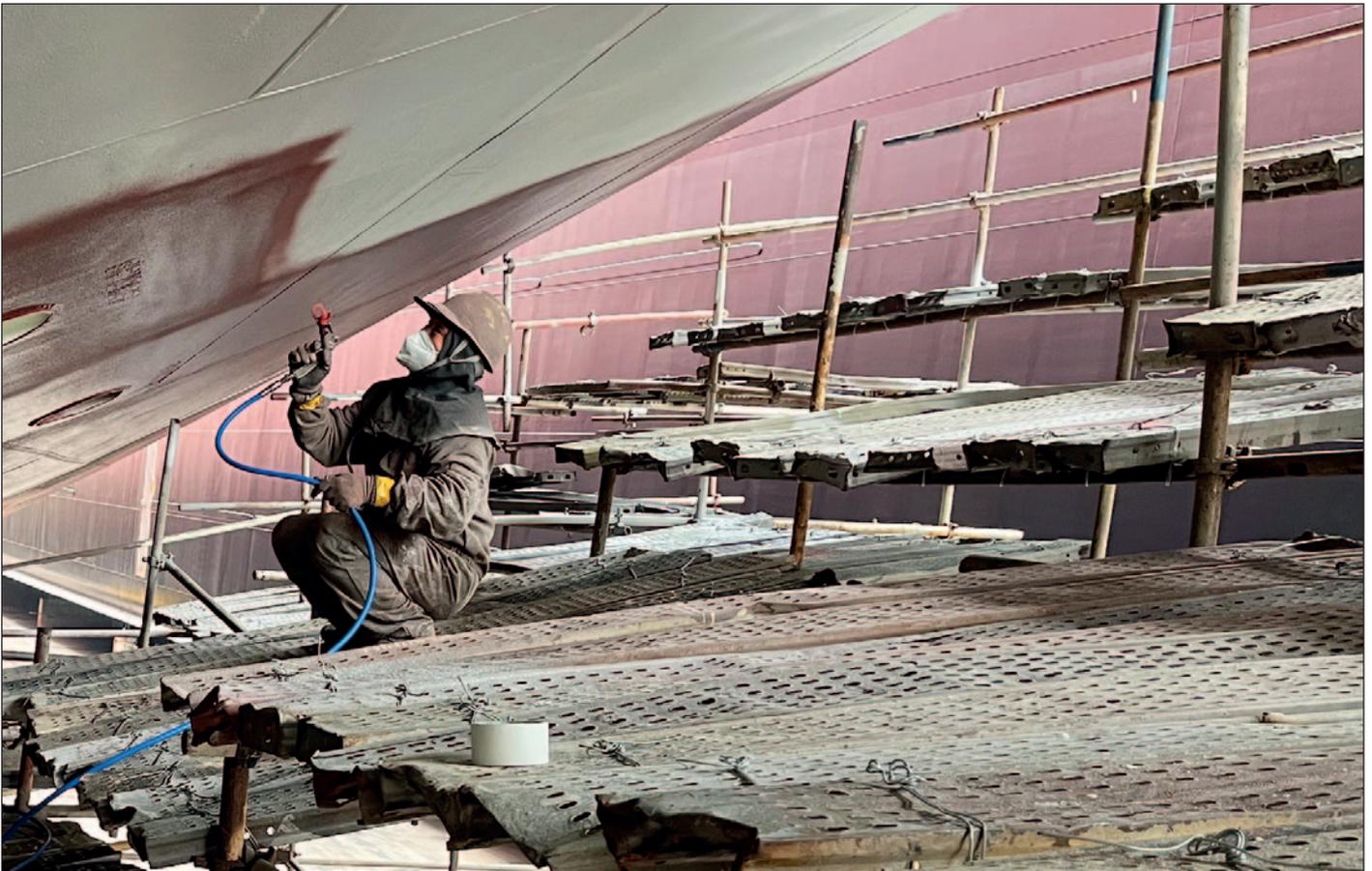
environmental idea behind scrubber systems. It is a lasting, chemically resistant coating that will withstand the hazardous pollutants and protect the scrubbers for the lifetime of the vessel.



Scrubber pipe ready for application.



Measuring the thickness of the coating.



Ecospeed application on scrubber outlet.



Scrubber outlets can be protected with Ecospeed against corrosion.

Fixing corroded pipes

If an existing scrubber suffers corrosion damage, it is not too late to fix it. Subsea Industries' sister company Hydrex regularly replaces scrubber overboard pipes. This is done on-site without the ship needing to go to drydock.

In all cases the new pipes are protected with Ecospeed. If no welding work needs to be carried out in close proximity to the coated area, the new pipes are coated in advance. If this is not an option, Ecospeed is applied after the new pipe is installed.

Pipes can also be replaced preemptively. If a pipe starts to corrode, a leak is just a matter of time. By performing the replacement before the leak occurs, a costly, unscheduled repair can be avoided.



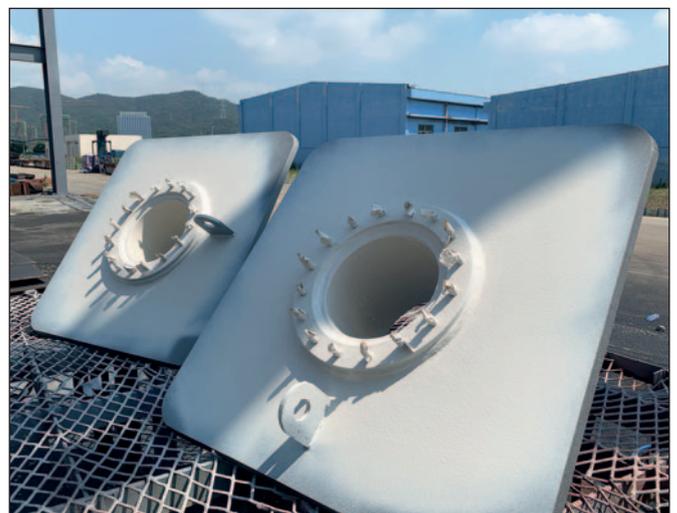
Ecospeed is chemically resistant and will withstand hazardous pollutants.



Ecospeed will protect the area around the outlets for the ship's entire lifetime.



Application of second Ecospeed layer on a new scrubber system.



All parts of a scrubber can be given the same lasting protection.

Conclusion

Several benefits make Ecospeed the perfect choice to protect scrubbers.

- The coating system is highly chemically resistant. Taking into account the nature of the process taking place inside the scrubber, this is essential for our customers.
- Ecospeed lasts the lifetime of a vessel. No repaints will need to be scheduled during future dockings of the ship. This saves time and money.
- It is a true biocide-free solution. The coating is 100% toxin-free and that there is no negative effect on the water quality or the marine environment at any point of its application or use. ■

Contact us for more information

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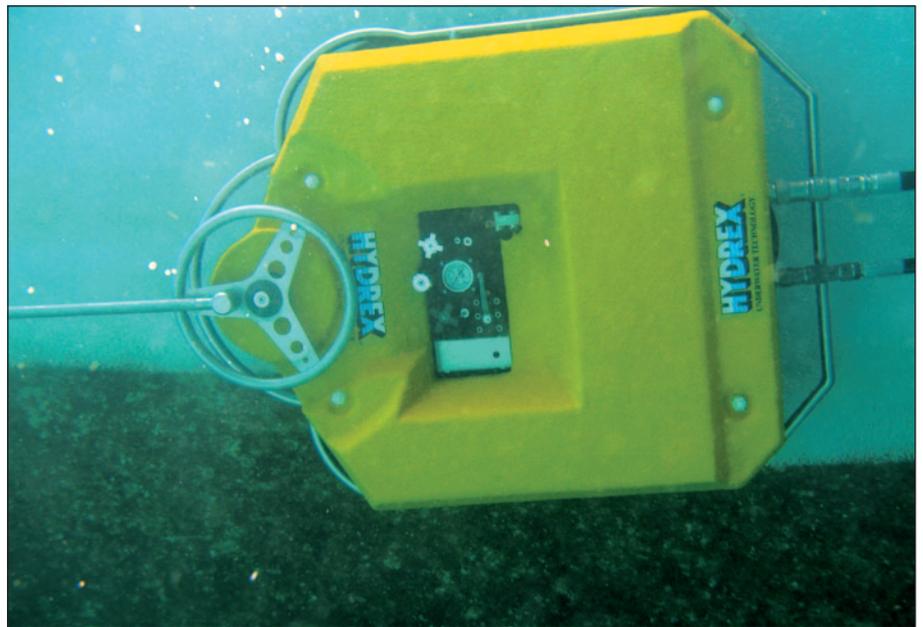
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Ecospeed, the coating for ultra long lay-ups

Sometimes a ship needs to remain stationary for a very long time. This can be because it is layed-up for economic reasons or because of the nature of the vessel. This has, however, no adverse effect on an Ecospeed coating which can always be restored to its optimum condition, regardless of how much fouling has attached itself to the hull while the vessel has been laying idle.

Ecospeed is ideally suited for ships during lay-ups because of its impermeability. This gives the coating its excellent and durable anticorrosive properties and protects the underwater hull against damage caused by any type of marine fouling. Despite the aggressive nature of certain types of fouling, no rust or damage to the steel will be present on the underwater hull of the vessel after cleaning.

This is illustrated by a cruise ship that remained stationary in the Caribbean for seven months after it was coated with Ecospeed. After this period the coating's qualities

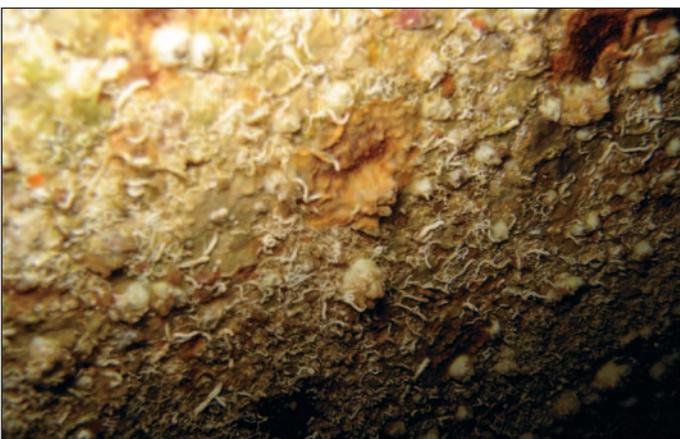


Even after long stationary periods the underwater hull of a vessel coated with Ecospeed can easily be cleaned underwater with divers or diverless systems.

allowed a complete removal of all fouling from the underwater hull of the vessel during an underwater cleaning without causing *any* damage to the underlying paint layers.

The coating's properties totally prevent fouling penetration, making the cleaning process extremely easy. It can be performed underwater or with controlled high pressure tools in drydock and can be repeated

whenever needed during the vessel's lifespan without causing damage or deterioration in quality. The coating's surface characteristics even significantly improve with each underwater hull cleaning. This unique quality gives shipowners the opportunity to have their ship operational again and its hull restored to its optimum condition whenever needed without any additional financial setback.



Thick layer of fouling on cruise ship after laying idle in the Caribbean for seven months.



Fouling removal from cruise ship without damage to the Ecospeed coating.

Corrosion damage very repair made ✓ easy



Subsea Industries has a product for filling and building up a corroded and pitted steel surface to its original form prior to recoating with Ecoshield. Ecofix is as tough as the steel itself, machinable, and can be used to repair most pitting or corrosion damage on rudders, stabilizer fins, thrusters and other underwater gear.

Ecofix is used in combination with Ecoshield, the ultimate rudder protection coating. When a rudder or other piece of underwater ship gear has not been properly protected, the surface will become corroded.

Cavitation can cause severe pitting. The steel needs to be restored to its original shape with a smooth surface prior to recoating.

This is where Ecofix comes in. It is a superior, tested and proven filler. Because it uses the same basic resin as Ecoshield, the coating can be applied just one hour after the filler. The bonding and hardness are extraordinary. This is the effective alternative to very expensive fillers. And because it is part of the Ecospeed/Ecoshield family, it is fully compatible with our coatings.

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SUBSEA

PROTECTION AND PERFORMANCE



Subsea Industries NV, was founded in 1983 specifically to take care of the design, development and marketing of what has become an evolving line of underwater hull and propeller

cleaning equipment as well as the line of hard hull coating systems.

All products produced by Subsea Industries have the same goal in

mind: To keep the underwater part of your vessel in the best possible condition for its entire lifetime at the best possible performance.

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